Localized Chromaticity Correction of Low-Beta Insertions in Storage Rings,* E. FOREST, D. ROBIN, A. ZHOLENTS, LBL, M. DONALD, R. HELM, J. IRWIN, SLAC, and M. SULLIVAN, UC-IIRPA — The correction of the chromaticity of low-beta insertions in storage rings is usually made with sextupole lenses in the ring arcs. When decreasing the beta functions at the interaction point (IP), this technique becomes fairly ineffective, since it fails to properly correct the higher-order chromatic aberrations. Here we consider the approach where the chromatic effects of the quadrupole lenses generating low beta functions at the IP are corrected locally with two families of sextupoles, one family for each plane. Each family has two pairs of sextupoles, which are located symmetrically on both sides of the IP. The sextupole-like aberrations of individual sextupoles are eliminated by utilizing optics forming a -I transformation between sextupoles in the pair. The optics also includes bending magnets, which preserve equal dispersion functions at the two sextupoles in each pair. At sextupoles in one family, the vertical beta function is made large and the horizontal is made small. The situation is reversed in the sextupoles of the other family. The betatron phase advances from the IP to the sextupoles are chosen to eliminate a second-order chromatic aberration. The application of the localized chromatic correction is demonstrated, using as an example the lattice design for the low energy ring of the SLAC/LBL/LLNL PEP-II *B* Factory.

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